

To Place Orders

Telephone: 414-273-3850
800-558-9160

Fax: 414-273-4979
800-962-9591

Internet: www.sigma-aldrich.com

Mail: P.O. Box 2060
Milwaukee, WI
53201 USA

Mastercard, Visa & American Express accepted.
NO minimum order OR confirming
purchase order required.

Customer & Technical Service

Ordering, pricing, and shipping:

Telephone: 800-558-9160

Product information:

Telephone: 800-231-8327

MSDS Requests: 800-558-9160

E-mail: aldrich@sial.com

Mail: P.O. Box 355
Milwaukee, WI
53201 USA

SAFC-Bulk Chemicals & Custom Synthesis

Telephone: 800-336-9719

Office Hours

Monday through Friday
7 am - 7 pm

Saturdays, Sundays & Holidays
8 am - 12 noon

OUR Vision

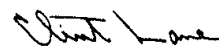
**We are Committed to the Success
of our Customers, Employees and
Shareholders through Life Science,
Technology and Service.**

In 2001 Aldrich will celebrate 50 years of continuous service to the scientific community. With your support, Aldrich has grown and changed, but has remained ever focussed on serving the needs of chemists and other scientists worldwide.

Recent investments in systems now allow you to place a single order and enjoy the same quality and service from all five Sigma-Aldrich brands. We also encourage you to visit our updated web site, **www.sigma-aldrich.com** for new product additions, structure searching, and technical information.

This new Aldrich Handbook contains over 48,000 products, including several hundred exclusive products from our sister companies Fluka, Riedel-de Haën® Laborchemikalien, and Sigma.

Our commitment to your success will always be our driving force. Should you have any suggestions for ways we can better serve your needs, please do not hesitate to contact us. We continue to be **"Chemists Helping Chemists"**.



Clint Lane
President

EXHIBIT

tabbles

A

C
Custo
Intern
Produ
New
"Plea
Glass
Cher
Supp
Chen
Aldri
Aldri
How
Key
Spec
& Se

MIN

T
by

App
56½
mask
are r
may
idea
quiet
poeti
comr

For r
the c
of Li
influ
pain
is ev
the
diag

This

If yc
for
the
app

OUR Vision

are Committed to the Success
our Customers, Employees and
reholders through Life Science,
nology and Service.

In 2001 Aldrich will celebrate 50 years of continuous service to the scientific community. With your support, Aldrich has grown and aged, but has remained ever focussed serving the needs of chemists and other scientists worldwide.

Recent investments in systems now allow us to place a single order and enjoy the same quality and service from all Sigma-Aldrich brands. We also encourage you to visit our updated web site, www.sigma-aldrich.com for new product listings, structure searching, and technical information.

The new Aldrich Handbook contains over 1000 products, including several hundred new products from our sister companies, Riedel-de Haën® Laborchemikalien, Sigma.

Our commitment to your success will always be our driving force. Should you have any questions for ways we can better serve your needs, please do not hesitate to contact us. We continue to be "Chemists Serving Chemists".

Clint Lane

Clint Lane
President

Contents

Customer Service	F2
Internet Service	F3
Production	F4-F5
New Products	F6
"Please Bother Us"	F7
Glass Shop	F8
Chemists Helping Chemists	F9
Supporting the Chemical Community	F10
<i>Aldrichimica Acta</i>	F11
Aldrich Product Labels	F12
How to Use this Handbook	F13
Key to Chemical Listings	F14
Special Packaging & Services	F15
• Pure-Pac™ containers	
• Sure/Seal™ bottles	
• Kilo-Lab™ cylinders	
MINI-BULK™ Containers	F16

CHEMICALS	1-1750
(alphabetical order)	
Kits	1751-1753
Molecular Formula Index ..	1755-1932
CAS Number	
Cross-Reference	1933-1994
Product Number Index	1995-2061
TECHWARE	T1-T795
Techware Index	T796-T825
Abbreviations & Acronyms ..	T826-T829
Tables and Charts	T830-T833
Trademarks and Registered Trademarks	T834-T837
General Information	T838-T842
Periodic Table	T843
Worldwide Service & Technical Support	T844-T845
Computer Search Fax Form	T846

The Lute Player by Orazio Gentileschi

Appearing on our cover, *The Lute Player* (oil on canvas, 56½ x 50½ in., c. 1612-1620) has been called Orazio Gentileschi's masterpiece. It shows a young woman seated at a table on which there are music sheets, a violin, a recorder, a flute, and a cornet. That she may be an allegory of Music, Harmony, or the Sense of Hearing are ideas that have been suggested but not substantiated. The grace and quiet concentration of the figure, and the somewhat melancholy and poetic atmosphere, however, raise the painting from the level of a common genre scene to that of a kind of idealization of musical creation.

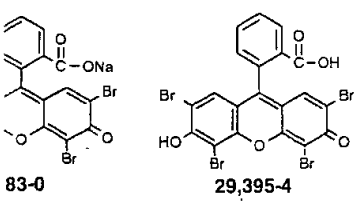


For many years, *The Lute Player* was thought to be a work of the artist Caravaggio. However, in 1922, the attribution was corrected when it was seen that the actual bill of sale of the painting to the prince of Liechtenstein in 1697 shows that it entered the prince's collection as a work of Gentileschi. Caravaggio's influence shows everywhere in Gentileschi's painting, beginning with the subject, as Caravaggio had also painted a *Lute Player* in the late 1590s. Aside from the musical theme, the influence of the earlier artist is evident in the mundane subject, the naturalistic rendering of the figure and other objects in the picture, the shallow space of the composition, the dramatic contrast of light and shadow, and the use of a strong diagonal shaft of light flowing into the space.

This painting is part of the Ailsa Mellon Bruce Collection at the National Gallery of Art in Washington, D.C.

If you would like a reproduction of this painting, we will be happy to send you a full-color print (11 x 14 in.) for \$4.00 (to cover postage and handling). Please request **Z25,188-7** and specify *The Lute Player* from the cover of the 2000-2001 Aldrich Handbook. You can also contact us for a list of paintings that have appeared in Aldrich publications and are available as full-color prints.

5,5'-dibromo-2',7'-.....	10g	15.30
nm Beil. 19,233 Merck	25g	30.40
	100g	99.00
1 Azure A (86,104-9) as differential staining of histopathologic Technic p 118. (3) Stain		
11 mp 275°(dec.)	25g	24.70
Vis 302	100g	70.80
843D UV-Vis 303	25g	29.90
Eosin Yellow sh,	25g	11.90
λ _{max} 517nm Merck TECS# LM5850000 microgram amounts. ¹ puscles. ² Component ocytes. ³ (1) Anal. Res. 1902, 7, 138. (3)	100g	34.20
5380, Eosin.....	25g	11.30
)	100g	32.60
1,130.85 mp 177-179°.	5g	28.70
N 794.20 mp 155°(dec.)	5g	34.60
tetrabromo-.....	500mL	30.10
ck Index 12,3639		
30:2, Solvent Red 43,	5g	16.40
oil, 19,228	25g	53.60
30		
1t Red 43,.....	25g	15.00
	100g	44.70
9		
(1-methylaminoethyl)benzyl	5g	25.50
p 255° d 1.124	25g	41.10
39 9,209 11,230 14,159	100g	84.20
1(1),1277C		
T HYGROSCOPIC		
ation of optically pure		
(2) Tetrahedron:		
(1) Synth. Commun.		
% D	100mg	193.90
i -34° (c=4, D ₂ O)		



Ephedrine

86,223-1	(1 <i>R</i> ,2 <i>S</i>)-(-)-Ephedrine hydrochloride, 99% [50-98-6] [(1 <i>R</i> ,2 <i>S</i>)-(-)-α-(1-methyl-....	25g	29.10
★	aminoethyl)benzyl alcohol hydrochloride] C ₆ H ₅ CH[CH(NHCH ₃)CH ₃]OH·HCl	100g	53.40
	FW 201.70 mp 216-220° [α] _D ²⁵ -34° (c=4, H ₂ O) Beil. 13,637 Fieser 14,159 15,154 Merck		
	Index 12,3645 FT-NMR 1(2),586B R&S 1(1),1475D RTECS# KB1750000 TOXIC		
	IRRITANT		
86,039-5	(1 <i>R</i> ,2 <i>S</i>)-(-)-Ephedrine nitrate, 99% [81012-98-8] [(1 <i>R</i> ,2 <i>S</i>)-(-)-α-(1-methylamino-.	25g	142.70
	ethyl)benzyl alcohol nitrate] C ₆ H ₅ CH[CH(NHCH ₃)CH ₃]OH·HNO ₃ FW 228.25		
	mp 126-128° [α] _D ²¹ -31° (c=5, H ₂ O) Fieser 14,159 15,154 FT-IR 1(1),1277D		
	Safety 2,1515A R&S 1(1),1475E LIGHT-SENSITIVE		
28,574-9	Ephedrine hydrochloride, 99% [134-71-4] [α-(1-methylaminoethyl)benzyl.....	25g	36.40
★	alcohol hydrochloride] C ₆ H ₅ CH[CH(NHCH ₃)CH ₃]OH·HCl FW 201.70 mp 188-190°	100g	57.90
	[α] _D ²⁵ 0° (c=2, H ₂ O) Beil. 13(1),254 Merck Index 12,3645 FT-NMR 1(2),586C		
	Safety 2,1514C R&S 1(1),1475F RTECS# KB1575000		
31,673-3	(1 <i>S</i> ,2 <i>R</i>)-(+)-Ephedrine hemihydrate, 98% [(1 <i>S</i> ,2 <i>R</i>)-(+)-α-(1-methylaminoethyl)-.....	25g	36.90
★	benzyl alcohol] C ₆ H ₅ CH[CH(NHCH ₃)CH ₃]OH·1/2H ₂ O FW 174.25 mp 39-43°		
	Fp >230°F(110°C) [α] _D ¹⁹ +40.5° (c=5, 1 <i>N</i> HCl) Fieser 5,289 9,209 14,159 15,154		
	FT-NMR 1(2),585C Safety 2,1513C R&S 1(1),1475B RTECS# KB0600000 IRRITANT		
	HYGROSCOPIC		
49,102-0	(1 <i>S</i> ,2 <i>R</i>)-(+)-Ephedrine- <i>N</i> -methyl- <i>d</i> ₃ hydrochloride, 98 atom % D	100mg	193.90
	C ₆ H ₅ CH[CH(NHCD ₃)CH ₃]OH·HCl FW 204.72 mp 221-225° [α] _D ²⁵ +35° (c=1, H ₂ O)		
	IRRITANT HYGROSCOPIC		
	Manufactured by ISOTEC INC.		
85,733-5	(1 <i>S</i> ,2 <i>R</i>)-(+)-Ephedrine hydrochloride, 99% [24221-86-1] [(1 <i>S</i> ,2 <i>R</i>)-(+)-.....	1g	15.40
★	α-(1-methylaminoethyl)benzyl alcohol hydrochloride]	25g	36.20
	C ₆ H ₅ CH[CH(NHCH ₃)CH ₃]OH·HCl FW 201.70 mp 218-220° [α] _D ²³ +34.3° (c=5, H ₂ O)		
	Beil. 13,636 Fieser 14,159 15,154 FT-NMR 1(2),587A FT-IR 1(1),1278A Safety 2,1514D		
	R&S 1(1),1475G RTECS# KB1925000 IRRITANT LIGHT-SENSITIVE		
23,440-0	Epandrosterone, 97% [481-29-8] (<i>trans</i> -androsterone.....	1g	13.40
	5α-androstan-3β-ol-17-one, isoandrosterone) FW 290.45 mp 172-174°	5g	44.60
	[α] _D ²⁵ +92° (c=1, CH ₃ OH) Beil. 8(4),584 Merck Index 12,3646 FT-NMR 1(3),573A		
	FT-IR 1(2),1050C Safety 2,1515C R&S 1(2),2857L		
E101-2	Epibromohydrin, 98% [3132-64-7] (1-bromo-2,3-epoxypropane) FW 136.98	5g	14.80
★	mp -40° bp 134-136° <i>n</i> _D ²⁰ 1.4820 d 1.601 Fp 133°F(56°C) Beil. 17,9 FT-NMR 1(1),370B	100g	38.80
	FT-IR 1(1),232A Safety 2,1516D R&S 1(1),247L RTECS# TX4115000 HIGHLY TOXIC	500g	128.90
	CORROSIVE		
85,523-5	(-)-Epicatechin, 97% [490-46-0] FW 290.27 mp 240°(dec.)	100mg	13.40
✓	[α] _D ²³ -51.3° (c=0.6, H ₂ O/CH ₃ COCH ₃ , 1:1) Beil. 17,214 FT-NMR 1(2),326A	1g	54.00
	FT-IR 1(1),1120D R&S 1(1),1357K RTECS# KB3745000	5g	215.60
36,157-7	(<i>R</i>)-(-)-Epichlorohydrin, 99% [51594-55-9] FW 92.53 bp 92-93°/360mm <i>n</i> _D ²⁰ 1.4380 ..	250mg	12.80
	d 1.183 Fp 93°F(33°C) [α] _D ²⁵ -34° (c=1, CH ₃ OH) Beil. 17(1),4 FT-NMR 1(1),369C	1g	29.90
	R&S 1(1),247J RTECS# TX4900000 HIGHLY TOXIC CANCER SUSPECT AGENT	5g	102.20
	97% ee/GLC		
49,251-5	Epichlorohydrin- <i>d</i> ₅ , 98 atom % D [69533-54-6] FW 97.57 mp -57° bp 115-117°	1g	317.70
	<i>n</i> _D ²⁰ 1.4380 d 1.247 Fp 93°F(33°C) HIGHLY TOXIC CANCER SUSPECT AGENT		
	Manufactured by ISOTEC INC.		
	Stabilized with hydroquinone		
49,250-7	Epichlorohydrin-2- <i>d</i> , 97 atom % D [70735-27-2] FW 93.53 mp -57° bp 115-117°	250mg	878.70
	<i>n</i> _D ²⁰ 1.4380 d 1.196 Fp 93°F(33°C) HIGHLY TOXIC CANCER SUSPECT AGENT		
	Manufactured by ISOTEC INC.		
	Stabilized with hydroquinone		
24,069-9	Epichlorohydrin, 99+% [106-89-8] (1-chloro-2,3-epoxypropane) FW 92.53	100g	21.70
✓	mp -57° bp 115-117° <i>n</i> _D ²⁰ 1.4380 d 1.183 Fp 93°F(33°C) Beil. 17,6 Fieser 1,355 4,222		
★	5,290 Merck Index 12,3648 FT-NMR 1(1),369B FT-IR 1(1),231D Safety 2,1517A		
	R&S 1(1),247I RTECS# TX4900000 HIGHLY TOXIC CANCER SUSPECT AGENT		
	Employed in the preparation of polyglycidyl ethers ¹ and as a cross-linking agent for		
	polymers. ² (1) Synthesis 1993, 487. (2) Chromatographia 1993, 37, 603.		
E105-5	Epichlorohydrin, 99% [106-89-8] (1-chloro-2,3-epoxypropane)	5g	12.80
★		100g	13.00
		1kg	20.20
		3x1kg	57.10

